ELEVATED SERUM TUMOR NECROSIS FACTOR IS NOT USEFUL FOR MONITORING CARDIAC TRANSPLANT REJECTION

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Elevated serum tumor necrosis factor (TNF) is useful for non-invasive detection of rejection (REJ) after liver transplant and has been suggested for use in monitoring REJ after heart transplant. To determine the predictive value of serum TNF for detection of cardiac REJ, 91 central venous samples were assayed for TNF by micro-ELISA technique at the time of routine endomyocardial biopsy (embx) in 53 cardiac transplant pts on triple drug immunosuppression. Elevated TNF levels were defined as >75 pg/ml and normal TNF were <75 pg/ml (50 normal non-transplant volunteers). No patients had evidence of infection.

	Embx results		
	Clear	Mild REJ	Mod REJ
TNF <75 pg/ml	35	17	7
TNF >75 pg/ml	20	11	1

Elevated TNF levels did not predict cardiac REJ nor did normal levels indicate the absence of REJ. Although predictive of REJ in the liver, where there is a large resident monocyte population, measurement of serum TNF levels are not helpful for detection of REJ following cardiac transplantation.

PERCUTANEOUS CORONARY ANGIOSCOPY FINDINGS IN PATIENTS WITH CARDIAC TRANSPLANTATION

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Allograft coronary artery disease is one of the major causes of morbidity and mortality among cardiac transplant recipients. Its presence and severity may be underestimated by coronary angiography. Percutaneous coronary angioscopy (PCA), which directly visualizes the surface morphology within the coronary artery, was performed without complications in 14 cardiac transplant recipients during their annual coronary angiography (RCA=11, LAD=2, CFX=1). Results:

	ANGIOGRAPHY		
ANGIOSCOPY	Normal	Nonobstructive	Obstructive
Normal	8	0	0
Nonobstructive plaque	3	0	0
Obstructive plaque	0	2	1

Three of eleven patients (27%) with normal angiography had atherosclerotic plaques detected by PCA. Two patients with nonobstructive disease upon angiography had obstructive plaques by PCA. Angioscopy findings agreed with angiography in 9/14 patients (64%), however, angioscopy revealed more severe disease than was suspected in 5/14 patients (36%). PCA revealed abnormal surface morphologies which included pigmented atherosclerotic plaques with and without obstruction, and nonpigmented (white) intimal thickening with obstruction. In conclusion, PCA can be performed safely in cardiac transplant recipients, PCA is more sensitive in detecting atherosclerotic disease than angiography and revealed surface morphologies that may represent two different types of allograft coronary artery disease in cardiac transplant recipients. Further long-term studies will determine the usefulness of PCA as a clinical tool in the early diagnosis and treatment of allograft coronary artery disease.

CHANGES IN LEFT VENTRICULAR MASS WITH REJECTION FOLLOWING INFANT HEART TRANSPLANTATION

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Left ventricular (LV) hypertrophy occurs following infant heart transplantation (HTx). To evaluate the change of LV mass (M) and its correlation with rejection episodes (#Rj) after HTx, we studied 33 HTx pts under 6 months of age. LVM and posterior wall M (LVWM) were studied with echo one week, 1 month, and 3 months after HTx and compared to % normal values and (#Rj) at 1 month.

		1st Week	1 Month	3 Month
LVM	(g)	19.8±5.1	27.3 ±7.4*	28.5±5.6*
	(%N)	103.2±24.5	137.3±36.0*	138.6±32.0*
LVWM	(g)	15.9±5.2	22.0±7.5*	21.8±6.0*
	(%N)	82.1±23.0	111.3±35.7*	104.6±30.4*
#Rj	(1Mo)	0.(n=6)	1(n=17)	2(n=10)
LVM	(%)	104.5±27.7	142.2±36.1**	148.9±31.3**
LVWM	(%)	83.4±24.6	114.8±35.3	122.2±36.2

*p<0.01, **p<0.05 compared to 1st Week

At 1 and 3 months, LVM and LVWM increased from both values in the 1st week and from normal values. LVM changes at one month correlated with #Rj but was not reflected in changes in the LVWM. We conclude that HTx in infancy increases LVM primarily through increasing septal thickness; the degree of thickening correlating with rejection.

VARIABILITY OF ORGAN UTILIZATION CRITERIA EXACERBATES THE NATIONAL SHORTAGE OF HEART DONORS

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Heart transplantation (HT) is currently limited by a shortage of donor organs. As many as 35% of patients awaiting HT die prior to surgery. A problem compounding the donor (DO) shortage may be variability of donor acceptance criteria. Therefore, heart utilization was analyzed by polling 64 organ procurement organzations (OPO) of which 14 responded, allowing analysis of 988 donor cases. The mean percent of donor hearts transplanted was 44% (range 23-83%). Cause for heart utilization refusal varied widely between OPOs, likely representing DO selection bias of the various transplant centers. The most common causes of refusal when recipients were available are listed below. Only OPOs with ≥30 donors were analyzed since percentages of smaller numbers would not represent overall trends.

Reason heart refused	#donors refused	Average %	Lowest %	Highest %
ECG abnormal	56	6.5	0	19
Age	83	7.7	1.3	18
Unstable	84	9.2	0	23
Hypertension	22	2.2	0	6.3

In no instance was a single OPO responsible for more than one of the highest percentages. However, the two OPOs with the highest utilization of donors accounted for all of the lowest percentages. We conclude that DO selection bias plays a major role in the utilization of hearts for HT. Guidelines for organ acceptance should be agreed upon between programs. Utilization practices should be continuously monitored and possibly standardized.